

PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
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ORDINARY MEETING

WEDNESDAY, 6th DECEMBER, 1961, at 5.30 p.m. (Tea 5 p.m.)

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 1st November, 1961.
2. Recommendation of candidates for Fellowship. First reading.
3. Recommendation of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library [see p. 32].
6. Nomination of Officers and Council for 1962.
7. Admission of Fellows.
8. Exhibits.
9. Communications.

1. Dr. D. J. Lewis

(*Medical Research Council*)

Simuliidae in northern Venezuela

[ABSTRACT]

In the course of a visit to the Venezuelan Ministry of Health, on behalf of the World Health Organisation, Simuliidae were investigated in the area of human onchocerciasis. Eleven species were encountered and their breeding places were located. It was found that three species bit man and that *Simulium metallicum* Bellardi harboured *Onchocerca volvulus* Leuckart or similar nematodes. Another possible vector, *S. exiguum* Roubaud, was abundant and observations were made on its biology in order to assess its practical significance.

2. Mr. Gordon Surtees

(*Pest Infestation Laboratory, Slough*)

Experimental studies on vertical stratification
in some grain-infesting beetles

[ABSTRACT]

One of the problems in the prevention of insect infestation in stored products is the detection of populations while the numbers are still small. A better understanding of distribution will aid in detection and some relationships between environmental conditions and distribution are described. Each of the species studied (*Sitophilus granarius* (L.), *Tribolium castaneum* (Herbst.), *Oryzaephilus surinamensis* (L.) and *Cryptolestes ferrugineus* (Steph.)) shows a different response, as indicated by the relative numbers on and below the surface of grain bulks, to various conditions of temperature and relative humidity. The importance of these changes in distribution is discussed in relation to aggregation, population establishment and control.

NOTICES

The next meeting will be held on *Wednesday, 17th January, 1962* :

(1) **Mr. J. M. Baker.**—Studies on the oak pinhole borer *Platypus cylindricus* (Fab.) (Coleoptera : Platypodidae).

(2) **Miss J. M. Taylor.**—A rearing technique for *Theocolax formiciformis* Westw. (Hymenoptera : Chalcididae), a parasite of *Anobium punctatum* (Degeer) (Coleoptera : Anobiidae).

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 1ST NOVEMBER, 1961

Professor G. C. VARLEY, President, in the Chair

Present, 79 Fellows and 9 Visitors

The minutes of the Ordinary Meeting held on 4th October were confirmed and signed by the President.

The names of the following candidates for election were read for the first time : Mr. David Victor Alford ; Mr. Charles Ragnar Buckingham Baker ; Dr. Santosh Kumar Banerjee, B.Sc., Ph.D. ; Mr. Wilfred Thurairajah Chellappah ; Mr. James Stephen Charles Dealey ; Mr. Jorge Paulo Andrade Cancela da Fonseca ; Professor Oswaldo Paulo Forattini, M.D. ; Mr. O. P. Garg ; Dr. Gordon Heath ; Mr. Philip John Hunter, B.Sc. ; Mr. R. Kumar ; Mr. Abdulrahman Salim Msangi, B.Sc. ; Mr. Shyam Behari Singh ; Mr. Richard John Snider ; and Mr. Tony Johnson Wilkes.

For the second time (taken as read) : Mr. Imtiaz Ahmad ; Dr. P. V. Anantha-krishnan, M.Sc., Ph.D. ; Dr. Nazir Ahmad Aslam ; Mr. Peter Lawrence Napier Bax, M.A. ; Mr. Terrence Victor Bourke, B.Sc. ; Mr. John Hugh Brown, M.Sc. ; Professor Michio Chujo ; Mr. Gordon Richard Conway, B.Sc. ; Capt. Anthony Crawforth, R.A.S.C. ; Mr. Johannes Human Giliomee, M.Sc. ; Mr. Robert Wilhelm Grünwaldt ; Mr. Philip Edwin Howse ; Mr. Henry Mark Jackson ; Dr. Ibrahim Akif Kansu ; Mr. Trevor John Martin ; Mr. Ansar Husain Naqvi ; Mr. Narendreshwar Bux Rai ; Mr. Richard Graham Thimann.

The Secretary read the names of the following newly elected Fellows of the Society : Professor Carlos Salvador Carbonell, Casilla de Correo 490, Montevideo, Uruguay ; Dr. Geoffrey Ebbage, 51, Cholmeley Park, London, N.6 ; Miss Barbara Agnes Hopkins, The Flat, Glenarary House, 5, Osborne Road, Windsor, Berks ; Dr. Arthur John Juniper, 23, Elm Avenue, Upminster, Essex ; Mr. Syed Ghulam Shabbir Kermani, B.Sc., M.S., c/o Director Plant Protection, Malir Research Station, Karachi, W. Pakistan ; Dr. Ronald Harry Wharton, Institute for Medical Research, Kuala Lumpur, Malaya ; and Miss Eleanor Mabel St. Aubyn White, County Education Office, Rope Walk, Ipswich, Suffolk.

Thanks were voted to donors of gifts to the Library since the last meeting.

The following papers, accepted for publication in the *Transactions*, were read in title :

"Bionomics of six species of *Anthocoris* (Heteroptera : Anthocoridae) in England," by N. H. Anderson. [Communicated by Dr. T. R. E. Southwood.]

"South American Peloridiidae (Hemiptera-Homoptera, Coleorrhyncha)," by W. E. China.

"Skeleton and musculature of the head of *Saldula pallipes* (F.) (Heteroptera : Saldidae)," by M. C. Parsons.

"The internal anatomy of the Peloridiidae (Homoptera : Coleorrhyncha)," by J. G. Pendergrast.

"Studies on the Brazilian Empididae (Diptera)," by K. G. V. Smith.

The President extended a welcome to Dr. Howard E. Evans, of the Museum of Comparative Zoology, Harvard.

The Hon. Miriam Rothschild and **Dr. Theresa Clay** exhibited some ectoparasites from the Brown Hare (*Lepus europaeus* L.). These included the Rabbit Flea

(*Spilopsyllus cuniculi* Dale), the Hare Louse (*Haemodipsus? lyriocephalus* (Burm.)), a biting midge (*Culicoides dewulfi* (Goet.)) and a chalcid (*Dibrachys* sp.). The latter, which was found several times in the fur of freshly shot hares, is normally parasitic on Lepidoptera, Diptera, etc. and may possibly use the hare as means of transport to the nest or form. Miss Rothschild drew special attention to the recent sharp rise in the number of rabbit fleas on the hare at Ashton, Peterborough; it is believed that the flea is now breeding on the hare and is no longer an incidental parasite. The rabbit, which is the true host, has been drastically reduced (through fresh outbreaks of myxomatosis) and the individual survivors are too scarce at present to provide a source of stragglers. Before the advent of myxomatosis the flea index on rabbits was 70; it is now 6. At the present time 88 per cent. of hares at Ashton are infested with rabbit fleas, the flea index is 2-3, and about 5 per cent. harbour 20 or more specimens. A permanent reservoir of potential flea vectors may well alter the course of myxomatosis in Britain.

Professor O. W. Richards exhibited, on behalf of Dr. E. McC. Callan of Rhodes University, Grahamstown, a specimen of *Cupes capensis* Kolbe (Coleoptera: Cupedidae) from the walls of his house in Grahamstown, South Africa. This rare beetle had probably emerged from old timber and had been attracted to the light; another specimen was found in similar circumstances in 1954. The British Museum (Nat. Hist.) have one fragmentary specimen.

Dr. P. T. Haskell gave a paper on Locust survival at sea, an abstract of which appeared on page 25.

The discussion which followed was opened by the President, who said he wondered whether the figure given by Weisfogh for the total quantity of fat did not err a little on the conservative side; it might be that a small percentage had a much higher fat content than the average. Dr. Haskell replied that analysis of field samples had so far shown that the locusts with the highest fat content would give the suggested upper limit of about twenty hours' flight.

Dr. A. M. Easton asked how flight was renewed if after twenty hours the locust had used all its fat. Dr. Haskell replied that locusts were cannibals and they had expected to find that they would eat each other. They did not do so, however, even after 24 hours starvation and it was difficult to understand how they obtained further reserves.

Mr. G. J. Kerrich suggested that locusts which had survived sea crossings greater than their flight potential might possibly have rested at intermediate points, on islands or on the mainland. Dr. Haskell replied that this was almost certainly not so in the examples quoted, although this certainly occurred during much migration over the sea. However, it should be emphasised that the majority of sea crossings do not depend on survival at sea since swarms regularly cross the narrow Red Sea and Gulf of Aden, for example, in a single sustained flight.

The President invited observations on the meteorological conditions at the time of the arrival of the locusts in the south west of the British Isles after a flight of sixty hours.

Dr. R. C. Rainey replied and said that the evidence was against intermediate landings. Landings in Spain and Portugal had been reported on other occasions; this time, there were off-shore winds along these coasts. Transport by ship was unlikely to have been significant, in view both of the speed of the movement and the fact that the first locusts arrived almost simultaneously in the Scilly Isles and in southern Ireland.

Dr. C. R. Ribbands asked if this meant that there must have been two landings on the sea to account for the time of sixty hours. Miss Z. Waloff replied that on the occasion when a few locusts succeeded in traversing about 1600 miles between the Canaries and the Scillies drifts of dead locusts, which may have provided resting places for the fliers, were seen over some 700 miles of sea to the north of the Canaries. Dr. P. Ellis (a visitor) suggested that the locusts might be gliding some of the time and therefore not using their fat reserves, which would account for the sixty hours' stretch. Dr. Haskell replied that locusts can normally only glide for a short time at a stretch, but occasional exceptional performances might be aided in this manner.

Dr. Ribbands said he was not sure that it had been established that exhausted locusts can take off from the sea. He felt the more obvious explanation of a long flight was that the locusts flew for a maximum time, then landed on the sea, were later washed up and took off again from the beach. Dr. Haskell pointed out that the mortality rate in the sea was enormous. Washing up did occur and was frequently reported but not many were still alive.

Dr. K. U. Clarke gave a paper on some responses of metabolism in insects to changes in environmental temperature, an abstract of which appeared on page 25.

The President said he was interested in experiments on the effect of puffs of warm air and wondered if there was some inhibition of responses in these circumstances. Dr. Clarke said he had no definite information on inhibition. The physiological condition of the animal made a considerable difference to the metabolic response to hormones; for example, in fish, as in insects, the same hormone could either stimulate or inhibit metabolism, depending upon the condition of the animal. Dr. Clarke continued, in reply to an enquiry by Dr. K. Mellanby, that he had not yet experimented with pupae.

The President added that it would be interesting to test these responses under CO₂ anaesthesia.

Mr. M. E. Solomon, referring to Dr. Clarke's statement, that the rule of temperature summation was commonly used with *Locusta migratoria* (L.), commented that it was difficult to see which rule was meant, since there were several of them and each applied only to some insects and only within a limited range of temperatures; in view of the complexity of animals, a simple summation rule of general applicability was scarcely to be expected.

PAUL FREEMAN, *Honorary Secretary.*

ADDITIONS TO THE LIBRARY

Presented

- Coiffait, H. *Les Coléoptères du sol*. [Vie et Milieu. Suppl. 7.] 8vo. Paris [n.d.].
 Pawlowski, J. N. *Methoden der Sektion von Insekten*. 8vo. Berlin, 1960.
 Reitter, E. *Der Käfer. Ein Wunder der Schöpfung*. Folio. Stuttgart, 1960.
Svensk Insektfauna. 9. Skalbagger. Coleoptera. Kortvingar: Fam: Staphylinidae.
 Underfam: Oxytelinae, Oxyporinae, Steninae, Enaestetinae. Häfte 2, by Thure
 Palm. 8vo. Stockholm, 1961.

In addition separates have been presented by Mr. R. M. Gambles; Anti-Locust Research Centre; East African Fisheries Research Organisation; Mr. R. G. Davies; United States Department of Agriculture; Laboratorium voor Toegepaste Entomologie, Amsterdam; Dr. T. T. Macan; Dr. A. B. Stam; Dr. A. M. Easton; Forest Products Research Laboratory, Princes Risborough; Mr. W. N. Beesley; Mr. D. J. B. Wijers; The Hon. Miriam Rothschild; Dr. E. T. Nielsen; Dr. J. J. Steyn; Professor J. L. Cloudsley-Thompson; and Mr. R. G. Fennah.